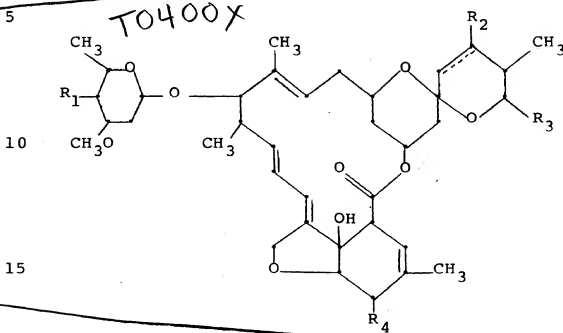


CM

WHAT IS CLAIMED IS:

1. A compound having the formula:



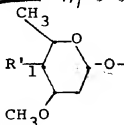
PS

wherein  $R_1$  is  $\text{O}$ ,  $\text{NR}_5\text{R}_6$  or

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PS

P<sub>1</sub>

wherein  $P_1$  is  $\text{O}$  or  $\text{NR}_5\text{R}_6$ :

$R_5$  and  $R_6$  are independently hydrogen, loweralkyl, loweralkanoyl, substituted benzenesulfonyl wherein the substituent is halogen; or loweralkyl sulfonyl;

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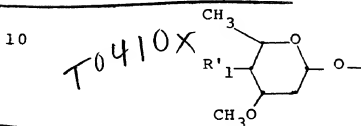
$P_1$ ,  $R_2$  is hydrogen or hydroxy;

$R_3$  is sec-butyl or iso-propyl;

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- $P_1$   
 $L$   $R_4$  is hydroxy or methoxy;  
 and the broken line indicates a single or a  
 double bond at the 22,23-position provided that  $R_2$   
 can only be hydroxy when the broken line indicates a  
 single bond.

2. The compound of claim 1 wherein  $R_1$  is:



PS 15  
 40, 50 and  $R'_1$  is =O, or  $-NR_5R_6$  wherein  $R_5$  and  $R_6$   
 are independently hydrogen, methyl or acetyl.

50 20 is =O. 3. The compound of claim 2 wherein  $R'_1$  is

41 4"-keto-avermectin Bla/Blb. 4. The compound of claim 3 which is

25 41 4"-keto-22,23-dihydro avermectin Bla/Blb. 5. The compound of claim 3 which is

30 41  $-NR_5R_6$  and  $R_5$  and  $R_6$  are independently hydrogen, methyl or acetyl. 6. The compound of claim 2 wherein  $R'_1$  is

41 4"-deoxy-4"-amino-avermectin Bla or Blb. 7. The compound of claim 6 which is

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8. The compound of Claim 6 which is  
(41) 4"-deoxy-4"-amino-22,23-dihydro-avermectin Bla or Blb.

5 (41) 9. The compound of Claim 6 which is  
4"-deoxy-4"-acetylamino-avermectin Bla or Blb.

10 (41) 10. The compound of Claim 6 which is  
4"-deoxy-4"-acetylamino-22,23-dihydro avermectin Bla  
or Blb.

11. The compound of Claim 6 which is  
(41) 4"-deoxy-4"-N,N-dimethylamino-avermectin Bla or Blb.

(41) 15 12. The compound of Claim 6 which is  
4"-deoxy-4"-N,N-dimethylamino-22,23-dihydro  
avermectin Bla or Blb.

N  
K  
N  
P  
20 13. A process for the preparation of the  
compounds of Claim 1 wherein  $R_1$  or  $R'_1$  is =O  
which comprises treating a compound wherein  $R_1$  or  
 $R'_1$  is hydroxy with dimethyl sulfoxide and oxalyl  
chloride or trifluoroacetic anhydride, or with  
N-chlorosuccinimide and dimethylsulfide.

25 14. A process for the preparation of  
a compound of Claim 1 wherein  $R_1$  or  $R'_1$  is  
-NR<sub>5</sub>R<sub>6</sub> wherein R<sub>5</sub> and R<sub>6</sub> are as defined in  
Claim 1 which comprises treating the corresponding  
compound wherein  $R_1$  or  $R'_1$  is =O with an ammonium  
salt or methyl ammonium salt and a reducing agent and  
optionally treating the thus produced 4"-deoxy-4"-  
amino-or 4'-deoxy-4'-amino compound with an acylating  
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agent in the presence of a base to produce the 4"-deoxy-4"-acylamino and 4'-deoxy-4'-acylamino compound or optionally treating the amino compound with aqueous formaldehyde and a reducing agent under acidic conditions to produce the corresponding 4"-deoxy-4"-N,N-dimethylamino and 4'-deoxy-4'-N,N-dimethyl-amino compounds.

15. The process of Claim 14 wherein the salts used are the acetate, propionate or benzoate, and the reducing agent is sodium cyano borohydride.

16. The process of Claim 15 wherein the salt used is the acetate.

13. <sup>13</sup> A method for the treatment of <sup>helminthiasis</sup> parasitic infections which comprises administering to an animal infected with parasites <sup>helminths</sup> an effective amount of a compound of Claim 1.

14. <sup>14</sup> A composition useful for treating animals infected with parasites <sup>helminths</sup> which comprises an <sup>inner</sup> <sup>an effective amount of</sup> carrier and a compound of Claim 1.

19. A method for the treatment of bacterial infections which comprises administering to an animal infected by bacteria, an effective amount of a compound of Claim 1 wherein  $R_1$  or  $R'_1$  is -NR<sub>5</sub>R<sub>6</sub> and R<sub>5</sub> and R<sub>6</sub> are as defined in Claim 1.

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20. A composition useful for treating  
bacterial infections which comprises an inert carrier  
and a compound of Claim 1 wherein  $R_1$  or  $R'_1$  is  
-NR<sub>5</sub>R<sub>6</sub> and R<sub>5</sub> and R<sub>6</sub> are as defined in  
Claim 1.

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